

## ABSTRACT OF THE DISCLOSURE

The present invention provides a method for preparing silica containing molecular sieves which may be mixed with an organic polymer to create a mixed matrix membrane. Further, this invention includes a method of making such a mixed matrix membrane and the membrane itself. A process for separating component gases from a mixture using the subject mixed matrix membrane is also described. The method for preparing silica containing molecular sieves comprises super water washing silica containing molecular sieves to produce water washed molecular sieves which are substantially free of surface remnants. Super water washing also ideally lowers the concentration of alkali metals in the molecular sieves. The water washed sieves are sufficiently free of surface remnants such that when the water washed sieves are subjected to a Sieve Wash Conductivity Test, a wash filtrate is produced having a conductivity of less than 110 micro mhos/cm, more preferably less than 80 micro mhos/cm, even more preferably less than 50 micro mhos/cm, and most preferably less than 30 micro mhos/cm. It is believed that super washing the sieves to this degree will enhance, compared to conventional preparation techniques, the ability of the molecular sieves to bond with an organic polymer to form a highly selective and permeable mixed matrix membrane.